

No. 660,935.

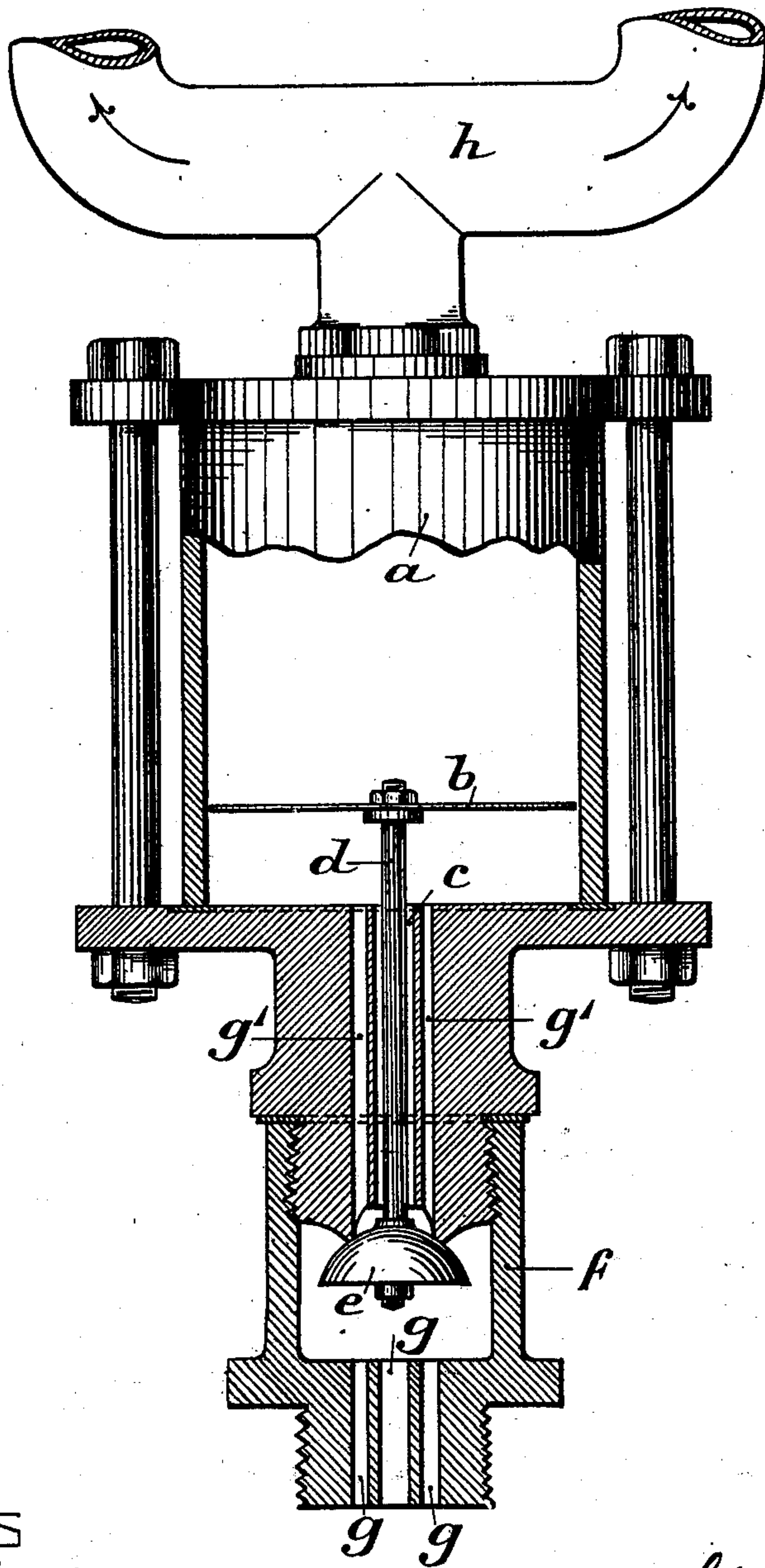
Patented Oct. 30, 1900.

H. STAUFF.

SHUT-OFF VALVE FOR WATER CHAMBERS OF LIQUID FORCING APPARATUS.

(Application filed Dec. 20, 1899.)

(No Model.)



WITNESSES

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per ATTORNEY

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# UNITED STATES PATENT OFFICE.

HEINRICH STAUFF, OF COLOGNE, GERMANY.

SHUT-OFF VALVE FOR WATER-CHAMBERS OF LIQUID-FORCING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 660,935, dated October 30, 1900.

Application filed December 20, 1899. Serial No. 741,010. (No model.)

*To all whom it may concern:*

Be it known that I, HEINRICH STAUFF, brewery owner, a subject of the German Emperor, residing at 324 Konnerstrasse, Arnolds-  
höhe, Cologne, Germany, have invented cer-  
tain new and useful Improvements in Shut-  
Off Valves for Water-Chambers of Liquid-  
Forcing Apparatus; and I do hereby declare  
the following to be a full, clear, and exact  
description of the invention, such as will en-  
able others skilled in the art to which it ap-  
pertains to make and use the same.

The automatic shut-off valves heretofore  
employed on the water-chambers of pressure  
apparatus for forcing beer consist of a ball  
floating on the water, which is made to close  
the air-conduit against the water as soon as  
the latter has risen sufficiently high in the  
glass chamber. Such shut-off valves are sub-  
ject to the disadvantage that before the com-  
plete closing of the air-conduit by the ball-  
valve takes place a small quantity of water  
always passes into the air-conduit, which wa-  
ter collects in the air vessel and becomes  
stagnant, having the effect, on the one hand,  
of more or less impairing the purity of the  
air which is led in contact with the beer, and,  
on the other hand, gradually reducing the air-  
space in the air-vessel, so that the apparatus  
requires frequent adjustment. Such passage  
of water takes place in an increasing degree  
when the ball-valve has been in use for some  
time, when by the frequent pressing against  
the opening of the conduit it loses its accurate  
spherical form.

The present invention relates to a construc-  
tion of shut-off valve apparatus whereby the  
above disadvantages are done away with,  
as it effectually prevents the passage of any  
water into the air-conduit. The arrange-  
ment of the valve apparatus for this purpose  
is as follows:

Referring to the accompanying drawing,  
which shows a vertical section of the appa-  
ratus, *a* is a glass cylinder in which is situ-  
ated a loosely-fitting thin disk *b* of metal or  
other material, which is connected by a rod  
*d*, passing loosely through the tubular pas-  
sage *c* with the valve *e* of elastic material.  
The combined parts are secured by screwing  
by means of a connecting-piece *f* to the wa-

ter-chamber below in precisely the same  
manner as with the existing shut-off valves,  
the chamber *a* being connected at top to the  
air-conduit *h*.

When the water - supply to the water-  
chamber is opened, the air contained therein  
passes through the channels *g g g* and *g' g' c*  
into the vessel *a* below the disk *b* and be-  
tween this and the glass cylinder upward into  
the air-conduit, the upward pressure of such  
air-current being made to hold the disk *b* and  
the valve *e* in a floating position in which  
the valve does not close the upper channels.  
When the air has been forced out of the wa-  
ter-chamber, water takes its place in the  
above-mentioned channels, and the upward  
pressure of this water upon the disk *b* closes  
the valve *e* upon its seat. The water can  
therefore only rise to such a height in the  
cylinder *a* as to effect the closing of the  
valve, so that no water can ever penetrate  
into the air-conduit. It is not necessary for  
the correct action of the apparatus to keep  
the weight of the disk *b* and the valve con-  
nected thereto so small that they are actu-  
ally raised by the air-currents. It is only  
necessary to see that the disk *b* and valve *e*  
do not bear so close against the communi-  
cating channels as to prevent the air from  
passing through. On the rising of the water  
this will then raise the disk *b* sufficiently to  
close the valve against further admission of  
water into the glass cylinder, as described.

Having now particularly described and as-  
certained the nature of this invention and  
in what manner the same is to be performed,  
I declare that what I claim is—

1. In an apparatus for forcing liquids by  
pneumatic pressure, the combination of an  
air-delivery conduit and a controlling ves-  
sel communicating with the air-conduit and  
arranged between the water-chamber of the  
pressure apparatus and said conduit, a disk  
loosely arranged in the controlling vessel,  
and a valve connected thereto to be actuated  
thereby and adapted to close or open the  
communication between the water-chamber  
and the air-conduit, whereby the water is  
prevented from entering the air-conduit.

2. In an apparatus for forcing liquids by  
pneumatic pressure, the combination of an

air-delivery conduit and a controlling vessel communicating with the air-conduit and arranged between the water-chamber of the pressure apparatus and said conduit, with a  
5 disk adapted to move loosely in the said controlling vessel, and a valve of elastic material connected with the said disk and adapted to open or close the communication between the water-chamber and conduit, whereby the

water is prevented from entering the air- to conduit.

In testimony whereof I affix my signature in presence of two witnesses.

HEINR. STAUFF.

Witnesses:

LOUISE BARNES,  
WILLIAM H. MADDEN.